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IN THE

Supreme Court of the United States

OCTOBER TERM, 1967.

No. 829

AETNA CASUALTY AND SURETY COMPANY, ET AL.,
Petitioners,

vs.

OSBORNE-McMILLAN ELEVATOR COMPANY, INC.,
A CORPORATION,
Respondent.

APPENDIX

Accompanying Petition for Writ of Certiorari to the Supreme Court of Wisconsin.

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APPENDIX.

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APPENDIX.

Accompanying Petition for Writ of Certiorari to the Supreme Court of Wisconsin.

SUPREME COURT OF WISCONSIN.

June 9, 1967.

THE AETNA CASUALTY & SURETY CO., a corporation et al.,
Appellants,

vs.

OSBORNE-McMILLAN ELEVATOR CO., a corporation,
Respondent.

HALLOWS, *Justice.*

This case is making its second visit to this court. It involves the question whether a steel storage tank containing grain exploded within the meaning of the term "explosion" in an insurance policy. In the first trial the jury found there was an explosion but on appeal we reversed and granted a new trial because of error in instructing the jury on the question of what constitutes an explosion. *Aetna Cas. & Sur. Co.* v. *Osborne-McM. E. Co.* (1965), 26 Wis. 2d 292, 132 N. W. 2d 510. Upon the retrial, the jury again found the grain elevator exploded and judgment was entered upon the verdict for $483,320.89 damages together with $91,884.43 interest and $19,705.12 costs, for a total of $594,910.44. A year after the second trial the Minnesota supreme court decided an explosion case which the appellants claim is determinative of the Minnesota law which is applicable to this case. Again before us are questions relating to what constitutes an explosion as the term is used in an insurance policy, the sufficiency of the evidence, and the correctness of rulings on motions and of the instructions to the jury.

The physical facts on this appeal are essentially the same as on the first and most of them are set forth in our previous opinion but some must be repeated to give a background understanding of the present issues. This action was commenced for declaratory relief by 44 appellant insurance companies (the insurance companies) to determine their liability under insurance policies for a loss suffered by the defendant-respondent Osborne-McMillan Elevator Company (the elevator company). One policy insured the buildings and the equipment and the other policy insured contents against various perils including explosion under an extended coverage endorsement.

The elevator company operated a grain elevator at Superior, Wisconsin, which consisted in part of a battery of concrete storage bins and four cylindrical steel storage tanks located along a slip on a dock in Lake Superior. The steel tank in question was 80 feet in diameter with sidewalls 80 feet high surrounded by a conical steel roof. The tank was built by welding together 10 tiers of steel plate of varying thickness each about eight feet high. The bottom tier was welded to a flat baseplate composed of 16 separate steel $\frac{1}{4}$th-inch thick arc segments eight feet wide which were welded together to form a circle. However, the 16 segments did not quite complete the bottom circumference of the tank; a small gap remained between two of the segments and was filled in with a small filler base which was improperly and incompletely welded into the gap. This defect constituted a notch or discontinuity in the steel baseplate, which significantly increased the amount of stress flowing through the steel around the notch. The base plate with the defective weld was bolted by 128 one-inch anchor bolts to a concrete platform. Thus the monolithic storage tank was secured to its concrete base.

It is conceded that steel contracts a known quantity for every degree of drop in temperature and when exposed

to low temperatures, such as the 27 degrees below zero which existed on January 17, 1962, the day in question, steel is extremely brittle. It is undisputed that the circumference of the steel wall of the tank at 27 degrees below zero would normally have contracted more than two inches from its size at 95 degrees above zero. The tank, built in 1958, was designed to support and contain 361,000 bushels of wheat. Wheat was first placed in the tank in March of 1959 and it was well filled in June of 1961 when the temperature was around 93 degrees. The last movement of grain was on June 29, 1961, when 4,000 bushels were removed. On January 17, 1962, the tank contained 361,000 bushels of wheat which weighed 21,660,000 pounds.

On January 17, 1962, about 1:00 o'clock in the morning when the temperature was about 27 degrees below zero, after having fallen from 30 degrees above zero at 6:00 p.m. on January 13, the tank suddenly burst or, as the jury found, exploded. The initial fracture in the tank traveled vertically from the defective weld in the baseplate up through the 10 tiers of steel plates, opening the tank from bottom to top. Within a fraction of a second, other fractures occurred elsewhere splitting the cylindrical wall into three major segments. One segment of the tank weighing approximately 87,100 pounds was folded over and was at its nearest point about 108 feet from the concrete platform. Another segment weighing approximately 75,921 pounds was wrapped backward around an adjoining tank which was caved in about 13 inches for a distance of 22 feet along its circumference. The third segment weighing 145,163 pounds was found in the slip adjacent to the pier with its bottom course 94 feet from where it had been attached to the concrete platform. About one-half of the anchor bolts had snapped in tension; the other half had been sheared off and all were bent away from the center of the tank. The roof of the tank settled in almost a vertical path. The

wheat came to rest in various levels of repose; approximately 100,000 bushels went into the adjacent slip. A portion of the grain was found 187 feet from the outer edge of the tank and generally covered a larger area than such volume would in a conical shape of repose caused by gravity. While there was no burning, charring, or combustion of the wheat, there was at the time of the occurrence vibration of the frozen ground and also an extremely loud noise.

The disputed fact issue concerned the elasticity of the wheat and its effect on the occurrence. The insurance companies claim the compressed wheat did not possess any appreciable elasticity or active internal force, that there was no sudden and violent increase of an internal pressure but only the passive resistance of the grain to a gradual compaction and such force played no part in the occurrence which was caused by the initial cold-weather-brittle fracture. The elevator company contends an active internal force existed in the compacted wheat, over and above the passive resistance, which active force contributed to the sudden and violent bursting of the storage tank and it is not necessary that such force be a cause of or contribute to the initial fracture, but in fact the evidence showed that it did contribute significantly.

In our first opinion we stated an explosion was a combination of several elements including such factors as increase in pressure, noise, a result such as a fractured container and not the least of which was an active force which suddenly and violently exerted itself in some form. Applying this concept to a nonexplodable substance, we stated, "The probability of grain like water which is not an explodable substance being an element of explosion consists in its ability to contain or harbor active forces or energy. In explosions involving a nonexplodable substance there must be an internal active force created which breaks out of its confinement. In the case of grain such active force

must be in addition to that of the normal static force exerted on the inside of a container because of the weight and position of the grain." 26 Wis. 2d at 302, 132 N. W. 2d at 514.

[1] The appellant contends the law requires a sudden and violent increase of the internal active force and argues this is required by our original opinion and by the subsequent opinion of the Minnesota court construing the Minnesota law which is applicable to the facts. The language of our first opinion did not require a sudden and violent increase in the internal active force to constitute an explosion. The increase of the internal force must manifest itself in a sudden and violent action such as a sudden and violent release by breaking the container, but to do this the increase of a nonexplodable substance like grain need not be sudden although in explodable substances there usually is a sudden buildup of pressure of force due to a chemical or nuclear reaction. We expressly stated the pressure required for an explosion to take place "need not be unusual, abnormal or suddenly produced." 26 Wis. 2d at 304, 132 N. W. 2d at 518. There is a distinction between a sudden and violent increase and a sudden and violent release. It is the sudden and violent release of the force which is an essential element of an explosion.

[2] More than a year after the second trial was concluded in September, 1965, the Minnesota court on October 28, 1966, decided *Honeymead Products Co.* v. *Aetna Casualty & Sur. Co.* (1966), Minn., 146 N. W. 2d 522. The *Honeymead* case involved a reconstructed storage tank containing 2,800,000 gallons of soybean oil. The temperature dropped to 21 degrees below zero and the tank wall suddenly burst apart starting in an area where a door in the tank had been constructed. In a suit to recover on insurance policies on the theory there was an "explosion," the jury found for the insurer. On appeal, the Minnesota

supreme court held that the normal pressure from the weight of the stored oil caused the brittle plates of the tank to fracture and the fracture was not due to an explosion "* * * caused by a sudden or violent increase of pressure from within the tank." The court also said there was no evidence "* * * of any sudden or violent *increase* of internal pressure commonly associated with an explosion." 146 N. W. 2d at 528-529. From this language the insurance companies argue the court found an essential element of an explosion to be a sudden or violent increase in internal pressure. We think not. The language used must be taken in reference to the fact that there was no increase in the pressure of the soybean oil, sudden or otherwise, over that of its weight and position in the tank. The decision quoted with approval from our first opinion wherein we pointed out an element of explosion was the sudden and violent release of the pressure from the container. 146 N. W. 2d at 528. We do not read the *Honeymead* decision as modifying our first opinion or holding an explosion can only occur if there is a sudden or violent increase of internal pressure in the tank.

The appellant argues its motion for a directed verdict should have been sustained because there was no expansion of wheat while the tank wall was intact, the fracture of the wall of the tank was a cold-weather-brittle fracture, and the gradual compaction of the wheat caused by the contraction of steel walls resulted only in the creation of passive resistance, which played no part in the occurrence until after an initial fracture of the wall. Of course, there was no physical expansion of the compacted mass of wheat while the tank was intact, but the jury found there was an internal force in the wheat seeking expansion or "modulus of elasticity" or a "desire" to return to its original shape. The actual expansion of the mass of wheat took place upon a bursting of the tank and its release from confinement; that is all an explosion requires of this element.

We think the initial fracture of the brittle steel wall of the tank cannot be solely and exclusively attributed to the incomplete weld at the base of the tank. If the fracture of the tank was due solely to the cold-weather-brittle fracture, the phenomena would be commonly called a rupture or a bursting and might have taken place in an empty tank but more easily in a full tank because of the added pressure of the weight of the wheat. It is difficult to isolate the first or initial fracture in the tank in the concept of an explosion when there are other almost simultaneous fractures which together disintegrate the tank. The phenomenon called an explosion must start somewhere and begin with something.

[3] In this context we can agree with the insurance companies' argument that the active internal force of the wheat must be a cause of the initial fracture of the tank, but it need not be the exclusive cause. When an explosion of a confined substance occurs, the container normally fractures. If the internal force is great enough, the container must give or fail. The greater the resistance offered by the container, the more violent the inevitable break. Some containers are so weak in resistance as not to be explodable. But the brittleness of metal, the fatigue of metal or a defect in the metal container are reasons why the container failed against the onslaught of a more powerful internal force seeking its release. If the compressed wheat exerted sufficient pressure upon the steel tank to cause it to suddenly and violently break, then that element of an explosion exists. It is not only the weakness of the container which must be considered but also the strength of the internal force. The explosion *per se* is more an effect than a cause, although it in turn can be the cause of other damage.

Although there is some evidence that a cold-weather-brittle fracture could occur in an empty tank, this does not render irrelevant the question whether or not the com-

pressed wheat harbored a modulus of elasticity. We are dealing with what happened, not what could have happened.

[4] We think there is credible evidence that the wheat contained an active internal force resulting from the gradual contraction of the steel wall in addition to the passive resistance of the grain to compaction. The jury could find as it did that there was a desire on the part of the wheat to regain its original uncompressed position. While the insurance companies have argued the testimony of the experts support their view, such interpretation is not the only one which can be given to the testimony. A jury issue was presented and it was for the jury to decide which inferences to draw and which experts to believe. It did not agree with the insurance companies' contention. We cannot say as a matter of law the jury's view of the testimony was erroneous. It would serve no purpose to review the technical testimony. The jury found there was an explosion. This means the wheat, because it was compressed by the contracting wall of the tank, had an active internal force which exerted itself against the wall over and above any passive resistance and in addition to the force of its weight and position, and this active force was sufficient to cause additional or increased stresses and strains in the wall of the container which were multiplied at the notch to the point the brittle steel could no longer withstand the strains and stresses and gave way in such a sudden and violent manner that it must be held an explosion took place within the meaning of the insurance policies.

[5, 6] We must arrive at this conclusion because if there is credible evidence which under any reasonable view supports the verdict, we ought not disturb it even though a contrary finding, if made by the jury, would likewise be sustainable. *Springen* v. *Ager Plumbing & Heating, Inc.* (1963), 19 Wis. 2d 487, 120 N. W. 2d 692; *Heritage Mut.*

Ins. Co. v. *Sheboygan County* (1962), 18 Wis. 2d 166, 118 N. W. 2d 118. On review we must view the evidence in the light most favorable to the verdict, otherwise there is not much use for the jury system. *Ziegler* v. *Wonn* (1963), 18 Wis. 2d 382, 118 N. W. 2d 706.

[7, 8] In instructing the jury on the factors constituting an explosion the trial judge included the sentence, "The additional active internal force need not, however, be unusual, abnormal or suddenly produced." It is claimed this is error; but we think not. This sentence appeared in the first opinion and is a correct statement of the law. The insurance companies also contend an instruction given was prejudicially erroneous because it permitted the jury to find an explosion without finding a causal connection between the alleged elasticity of the wheat and the initial fracture. The instruction complained of was:

> "If, however, you find that the wheat stored in the tank did have a modulus of elasticity and that because of the compression of the wheat there existed an active internal force in addition to that exerted by the weight and position of the wheat which additional active internal force combined with other factors to cause Tank A, to burst suddenly with noise and violence, you may find that there was an explosion of Tank A.* * *"

This sentence standing alone perhaps does not pinpoint the initial fracture, but it is not erroneous or misleading. The bursting of the tank included the initial fracture as well as the other fractures which disintegrated the tank and in the context of this case the elasticity of wheat was tied, if only loosely, to the initial fracture. There were other instructions defining rupture and bursting as not being synonymous with explosion. If the insurance companies had requested a more definite instruction, it could have been given.

[9, 10] It is argued the term "modulus of elasticity" was given undue prominence in the instruction; we think not. The existence of the modulus of elasticity, or internal active force in the wheat, was a key issue. A trial court must have and does have some leeway in the choice of language and emphasis in framing instructions which as a whole must not favor one side or the other but should set forth the respective versions of the evidence of the contestants. *Webb* v. *Wisconsin Southern Gas Co.* (1965), 27 Wis. 2d 343, 134 N.W. 2d 407. The insurance companies did not object to the instruction on the grounds now urged, nor did they ask for the instruction which they now contend should have been given. The instructions they submitted to the trial court were hardly more definite. Whatever inadequacies may be ascribed to the instruction are not prejudicial.

[11] Finally, the insurance companies argue the trial court committed prejudicial error by refusing to give the following instruction: "The proof of an internal force additional to that of the weight and position of the grain, is not an active force within the meaning of any of these instructions if the proof shows that it was only a potential force until after the Tank wall broke." The trial court refused to give this instruction because it would only have confused the jury since potential force is not defined. We think the instruction is not clear and would be unduly favorable to the insurance companies. Their theory of the case was adequately embodied in the instructions given without this dubious instruction; it was not error to refuse to give it

By the Court. Judgment affirmed.

SUPREME COURT OF WISCONSIN.

Feb. 1, 1965.

26 Wis. 2d 292.

The Aetna Casualty & Surety Company, a corporation, et al.,

Plaintiffs-Appellants,

vs.

Osborne McMillan Elevator Company, a corp.,

Defendant-Respondent.

Hallows, *Justice.*

This appeal raises the question of what is an explosion as that term as used in the insurance policies applied to the insured's business of storing and handling grain in Superior, Wisconsin. The word "explosion" is not defined in the policies but the exclusion clause of the endorsement provides: "Loss by explosion shall include direct loss resulting from the explosion of accumulated gases or unconsumed fuel within the fire box (or combustion chamber) of any fire vessel or within the flues or passages which conduct the gases of combustion therefrom. However, this Company shall not be liable for loss by explosion, rupture or bursting of: (a) steam boilers, steam pipes, steam turbines or steam engines; or (b) rotating parts of machinery caused by centrifugal force; * * *. The following are not explosions within the intent or meaning of these provisions: (a) concussion unless caused by explosion, (b) electrical arcing, (c) water hammer, (d) rupture or bursting of water pipes."

The tank in question was erected in the fall of 1958 on a re-enforced concrete platform and was located between a battery of concrete storage bins and the three other steel tanks which extended in a line along a slip in Superior Bay. The tank was a monolith constructed by welding steel plates together to form the wall which was welded to a base plate. The circular base plate was constructed by welding the ends of eight-foot long narrow plates $\frac{3}{4}$th of an inch thick and this base plate was secured to the concrete platform by some 128 bolts placed two feet apart in a circle having a diameter of approximately 80 feet. The bolts were embedded in the concrete and their threaded ends extended from three or four inches above the concrete surface of the slab. The tank was 80 feet high and a conical steel plate set on steel rafters formed its roof. An enclosed gallery containing a conveyor belt was connected to the concrete bins and ran across the top of all four steel tanks.

The tank was adequately designed to support and contain 361,000 bushels of number one dark northern spring wheat with a conventional margin of safety. The tank had been filled during June of 1961 when the air temperature was around 93 degrees. The last movement of the grain was on June 29 when 4,000 bushels of wheat were removed. On January 17, 1962, the tank contained 361,000 bushels of wheat which weighed 60 pounds per bushel, or 21,660,000 pounds. Shortly before 1:00 a.m. when the temperature had reached approximately 27 degrees below zero after having fallen from 30 degrees above zero at 6:00 p.m. on January 13, the tank suddenly burst into three major segments.

There is no substantial disagreement in the expert testimony that the initial fracture of the tank started at the bottom of the tank wall over a discontinuity or "notch"

in the base plate which was caused by an incomplete weld where a small filler plate ¾th inch wide had been placed to fill a gap between two sections of the base plate. The steel plate and tank were brittle because of the sudden drop in temperature and because of the low temperature the steel had lost most of its ductile qualities. It was generally agreed in the evidence this steel tank would normally contract more than two inches in circumference from its size at 93 degrees during a drop in temperature to 27 degrees below zero. The experts agreed that the stresses present in the tank wall from contraction instead of distributing themselves equally throughout the wall necessarily flowed around the notch where they became concentrated and too great for the cold steel to withstand. The wall of the tank split from bottom to top through the plates and not following the welds. Following the initial fracture the other two fractures almost instantaneously occurred. This fracturing consumed one-tenth of a second or from one-twenty-fifth to one-fiftieth of a second, and all the movement of the grain and the metal tank ceased in about two seconds.

After the occurrence one segment of the tank weighing approximately 87,100 pounds was at its nearest point 108 feet from where it had been attached to the concrete platform. Another segment weighing approximately 75,921 pounds was wrapped backward around an adjoining steel tank which was caved in about 13 inches to a height of 30 feet and a distance of 22 feet along its circumference. The third segment weighing approximately 145,163 pounds was found in the slip adjacent to the pier on which the tank had been located. The bottom course of this segment was 94 feet from where it had been attached to the concrete platform. Of the 128 steel anchor bolts, about half of them had snapped in tension and the other half had

been sheared off. A portion of grain was found 187 feet from the outer edge of the tank and generally covered a larger area than such volume would in a conical shape of repose. Nor is there any question that when the tank gave way, a loud noise and ground vibration were produced. Witnesses testified they heard a "terrific crash," "a giant roar," "a sudden capow—something hit," and "a loud sound comparable to that made by a jet hitting the sound barrier."

At the close of the trial the insurers moved for a directed verdict and on this appeal contend that the evidence did not show an increase in the internal pressure or force over that of weight and position of the grain in the tank, that the first fracture of the wall of the tank was a cold-weather-brittle fracture initiated by an incomplete weld, that the latent or potential energy in the stored grain was not converted to active or kinetic energy until after the fracture split the wall and therefore although there was suddeness in the occurrence accompanied by noise, there was no explosion. The insured argued then as now that the evidence presented a jury question of whether an explosion had occurred and that it was not necessary to have an increase in internal force in the grain to constitute an explosion.

[1] The trial court although inclined to agree with the insurers nevertheless submitted the case to the jury adopting in its instructions the insured's view of what constituted an explosion. The question presented to the jury was, "Was there an explosion involving Tank A on January 17, 1962?" In instructing the jury the court included Webster's New International Dictionary, 2d ed., 1960, definition, the American College Dictionary definition of an explosion, and then proceeded to give the following synonyms from the Synonyms Finder for the word "explosion": "Violent bursting with noise, sudden discharge,

fulmination, detonation, shock, ignition, shattering sound, concussion, collapse, blast, report, volley, shot, crack, pop." The court also instructed there may be an explosion without a sudden development of internal force or pressure, the pressure need not be unusual or abnormal or suddenly produced, and there may be an explosion without a sudden expansion of the volume of the contents of the contained substance. The trial court on motions after verdict recognized these instructions were tantamount to directing a verdict for the insured but justified them as being correct on the theory "an explosion is what an explosion does" and "an explosion is an idea of degree." We consider the instructions prejudicially erroneous in their interpretation of the word "explosion" in the policies as applied to the facts and especially in including the synonyms.

[2] Because one of the policies insured grain stored in five states, was negotiated in Minnesota and countersigned by a Wisconsin agent, a preliminary question arose of what state law applied. The court determined the Minnesota substantive law was controlling and no issue is taken with that ruling on this appeal. There appears to be no ruling of the Minnesota supreme court on the question involved and consequently the applicable rule is that when an issue involves foreign law and there is an absence of any foreign decision, the courts of this state must look first to their own decisions as controlling and secondarily to the general law or decisions of other jurisdictions. *Gulbranson-Dickson Co.* v. *Hopkins* (1919), 170 Wis. 326, 175 N. W. 93, 94; *De Lorenzo* v. *Supreme Lodge, Knights of Pythias* (1936), 222 Wis. 141, 268 N. W. 217, 220; *Harper* v. *Hartford Accident and Indemnity Co.* (1961), 14 Wis. 2d 500, 111 N. W. 2d 480. The trial court in its decision rejected *Bauman* v. *Midland Union Insurance Co.* (1952), 261 Wis. 449, 53 N. W. 2d 529, and relied on language in *Lever Bros. Co.* v. *Atlas Assurance Co.* (C. A. 7th, 1942),

131 F. 2d 770, to the effect that "an explosion is an idea of a degree" and an explosion is as an explosion does.

The trial court was in error in not applying *Bauman*, which involved the question of whether a silo burst as a result of an explosion of carbon dioxide gas formed by the fermentation of the silage or whether the silo was destroyed by reason of its own defects from overloading or from the sheer weight of the silage contained therein. After reviewing the evidence this court stated there was no credible evidence on which a jury could find the bursting of the wall of plaintiff's silo was caused by an explosion, or by the pressure of gas and therefore it was error not to have granted the defendant's motion for a directed verdict. The plain doctrine of the case is that an explosion as applied to silage in a silo or contents of a container must include the element of an active force independent of or in addition to the force of weight and height of the contents which seeks a sudden and violent release by breaking the container. Static or potential force or pressure resulting only from the weight of the contents in a container may cause a container to split open and release the contents but such an occurrence is hardly looked upon by the average person to be an explosion.

The *Lever Bros.* case involved a steel tank some 60 feet in diameter and 50 feet in height approximately 4/5th filled with cottonseed oil weighing 6,292,000 pounds. The plaintiff claimed an explosion occurred when the tank burst as a result of an increase of internal pressure caused by steam from a defective heating coil in the bottom of a tank. The insurer argued the tank failed because of the great stresses within the walls of the container and there was no credible evidence of an increased pressure inside of the tank sufficient to cause an explosion. The court decided there was evidence sufficient to sustain the verdict on the plaintiff's theory and then went on to answer the defendant's argu-

ment by stating the container could have exploded because of instability of its walls due to great stresses therein within the common and accepted understanding of the term. We do not agree this view is the common and accepted understanding of an explosion. Such a view confuses an explosion as commonly understood with other phenomena which involve similar destruction or damage.

Most decisions agree the word "explosion" in an insurance policy should be given its common and ordinary meaning by a court. However, a dictionary definition cannot always be taken as controlling. The latest edition of Webster's International Dictionary, 3d. ed., 1961, gives as a definition of "explosion," "a violent expansion or bursting that is accompanied by noise and is caused by a sudden release of energy from a very rapid chemical reaction, from a nuclear reaction, or from an escape of gases or vapors under pressure (as in a steam boiler)." This definition is not quite the same as earlier definitions and in itself would hardly apply to grain in a storage tank and seems to be confined to nuclear or chemical activity causing pressure. Other dictionary definitions, while helpful, are not decisive; if they were, the judging process would be easy. Many definitions of explosions of varying types may be found in Black's Law Dictionary, 4th ed., p. 689. See also 22 Am. Jur., Explosions and Explosives, sec. 2, pages 126, 127, and Anno., 28 A. L. R. 2d 995.

It is argued that the meaning of the word "explosion" is defined indirectly by the use in the exclusion clause of the words explosion, rupture, or bursting in reference to steam boilers, pipes, turbines and engines and rotating parts of machinery caused by centrifugal force. We do not agree that because the terms "explosion, rupture or bursting" are used in a series they are synonymous and that all ruptures and burstings of containers other than steam boilers, pipes, turbines, are explosions. *Allen* v. *Insurance Co. of*

North America (1954), 175 Pa. Super. 281, 104 A. 2d 191. Likewise, because of the exclusion of phenomena such as concussion, electrical arcing, rupture and bursting of water pipes which ordinarily do not constitute an explosion, it cannot be logically argued the meaning of the term "explosion" is thereby enlarged.

[3-5] There seems to be little dispute in the cases that an explosion as commonly understood is not one element such as an increase in pressure or noise or a result such as a fractured container, but the sum total of several elements not the least of which consists of an active force which suddenly and violently exerts itself in some form. In explodable substances the force exerts itself primarily in the substance through a chemical change or nuclear reaction or other process while in a non-explodable substance in a container the active force does not change the composition of the substance but acts through the substance in breaking out of the container. In cases of confined substances if the container fails because of structural weakness so as to let out the contents as distinguished from the contents bursting out because of its force, there is no explosion even though it might be said the tank ruptured or burst open. The probability of grain like water which is not an explodable substance being an element of an explosion consists in its ability to contain or harbor active forces or energy. In explosions involving a non-explodable substance there must be an internal active force created which breaks out of its confinement. In the case of grain such active force must be in addition to that of the normal static force exerted on the inside of a container because of the weight and position of the grain.

The necessity of the existence of an active force is the distinguishing characteristic of what has been held to be an explosion in the decided cases. In *Bower* v. *Aetna Ins. Co.* (N. D. Tex., 1944), 54 F. Supp. 897, it was held that a hot-

water-heating system exploded during cold weather when a radiator burst and water was forced from the radiator. The case was decided on the principle there was "a shattering by a sudden and intense pressure in distinction to a rupture, a sudden bursting or breaking up or in pieces, from an internal or other force." Likewise, an explosion was found in *Sargent* v. *Mechanics' Ins. Co.* (1933), 216 Iowa 688, 247 N. W. 267, when a coal-burning furnace having been fixed for the night was found 2 and ½ hours later with the pipe to the chimney lying on the floor and the furnace door open. In *Crombie & Co.* v. *Employers Fire Ins. Co. of Boston* (Tex. Civ. App., 1952), 250 S. W. 2d 472, a leak occurred in the ammonia valve packing in a refrigeration apparatus. The court found an explosion on the basis the packing had been blown out by the ammonia under a pressure of 190 pounds in the line. Here, an active force caused by the compression was seeking to re-transform the liquid to a gaseous state when the container was no longer able to withstand the pressure. In *American Casualty Co. of Reading, Pa.* v. *Myrick* (C. A. 5th, 1962), 304 F. 2d 179, also involving ammonia in a refrigeration plant, the court stated the common characteristic of an explosion of a confined substance was its sudden and with varying degree of violence breaking out of its confinement as a result of internal pressure. In *Jersey Ins. Co. of N. Y.* v. *Heffron* (C. A. 4th, 1957), 242 F. 2d 136, the question was whether the walls of a building were blown out in an explosion or simply collapsed, and the court considered an explosion as one of "compression and sudden, violent expansion of air; in other words, a violent release of energy causing a rupture, accompanied by noise."

The increase in internal pressure over the normal static pressure of the weight of the substance requirement or the necessity of the presence of active force is well illustrated in water hammer cases. In *L. L. Olds Seed Co.* v. *Commer-*

cial Union Assurance Co. (C. A. 7th, 1950), 179 F. 2d 472, the court held a water pipe exploded against the argument of the insurer that it merely ruptured because cold water cannot explode. In a water hammer, there is an increase in the pressure in the flow of water because of sudden stoppage of water and this active pressure in some cases is sufficient to suddenly break the water pipe. The necessity of "pent up" or build-up of active pressure as an element of an explosion was recognized in *Commercial Union Fire Ins. Co. of N. Y.* v. *Bank of Georgia* (C. A. 5th, 1952), 197 F. 2d 455, where the court held the water hammer was an explosion under the facts.

Where there was no sudden build-up of internal pressure or active force in a water pipe and such pressure as existed caused a slow separation of a faucet in a bathroom from the pipe at a slip joint, it was held that the constant exertion of internal pressure which forced the slip joint apart slowly did not amount to an explosion. *Reynolds* v. *Great American Ins. Co.* (1952), 334 Mich. 1, 53 N. W. 2d 594. In a case involving wet grain in an elevator, the court in *Hart-Bartlett-Sturtevant Grain Co.* v. *Aetna Ins. Co.* (1956), 365 Mo. 1134, 293 S. W. 2d 913, found the facts presented a jury question under the insurance policies of whether an explosion or a flood caused the damage. Flood water had found its way into the bottom of the elevators and had wetted the grain stored therein. The jury found the dislocation of the hopper bottoms of the elevators and the resulting damage to the hopper and the grain were caused by a build-up of pressure from the gases generated by the wet grain or by the gradual expansion of the grain. To the same effect, see *Chicago, Rock Island and Pacific R. Co.* v. *Aetna Ins. Co.* (1957), 180 Kan. 730, 308 P. 2d 119.

The characteristics and nature of an explosion are well stated in *Tires, Inc.* v. *Travelers Fire Ins. Co.* (C. A. 4th, 1958), 253 F. 2d 411, a case involving a water main rupture

which was held not to be an explosion. The court found no error in the instructions to the jury which included the concept of an internal pressure. The court said there "must * * * be pressure for an explosion to take place." It need not be unusual, abnormal or suddenly produced. Explosion used in "its ordinary sense and related to the common experience of men presupposes that there is first of all a building up of pressure from within or from some internal force, that because of this internal building up of pressure and as a direct result thereof, there is an expansion, the pressure can no longer be contained, and there is a bursting forth from within caused by an internal force with a possible violent noise and reaction."

[6] On this appeal the insurers argue there existed in the grain no active or kinetic force but only the static force resulting from weight and position. Their experts testified that grain does not compress so as to have any modulus of elasticity or the desire to regain its shape. The grain under this view could only settle and compress into a hard core which exerted no active force to expand, but merely resisted statically further compression when the steel tank attempted to follow the law of its nature and contract, as the temperature lowered. The experts for the elevator company contended that the wheat did have a modulus of elasticity and because of the compression of the wheat there existed an active force in addition to the force of weight which exerted a counter pressure against the contraction of the tank. Consequently, as we view the evidence and the reasonable inference which might be drawn, a jury question was presented concerning the existence of an active force in the wheat and its relation to the cold-weather-brittle fracture.

[7] This view of the evidence precludes a reversal on the ground there was error in refusing to direct a judgment for the insurers, but because of the prejudicial errors in the instructions they are entitled to a new trial. In view of this

disposition of the appeal, it is not necessary to comment on the other questions raised in the briefs excepting the court's failure to give an instruction tendered by the insurers. This instruction provided:

> "If you believe that Tank 'A' was destroyed by reason of conditions of temperature, or defects in, or the condition of the tank, itself, or by reason of the brittleness of the steel comprising the side walls of the tank, or by the sheer weight of the wheat within the tank, or by reason of the combination of all or any of such conditions, and if you believe the destruction of the tank was not caused by expansion of its contents, or by an increase in internal force or pressure within the tank, then you are instructed that there was no explosion of Tank 'A.'"

Where there is a conflict in the evidence and inconsistent theories on the cause of the event are advanced, we believe instructions encompassing both theories should be given. On the evidence as presented, the insurers were entitled to have this instruction given.

Judgment reversed, and a new trial granted on the question of liability.

GORDON, *Justice* (dissenting).

In my opinion, the manner in which the steel storage tank suddenly burst into three separate sections and spewed its contents over the area (as far as 187 feet from the base) to the accompaniment of a loud noise warranted the jury's factual finding that this was an explosion. I would affirm.

I am authorized to state that Mr. Justice FAIRCHILD and Mr. Justice HEFFERNAN join in this dissent.

39609.

STATE OF MINNESOTA IN THE SUPREME COURT.

No. 37 Blue Earth County

THOMAS GALLAGHER, *J.*
Took no part, SHERAN, *J.*

HONEYMEAD PRODUCTS COMPANY, *et al.*, *Appellants,*

39609 *vs.*

AETNA CASUALTY AND SURETY COMPANY, *et al.*, *Respondents.*

Endorsed
Filed October 28, 1966.
Mae Sherman, Clerk.
Minnesota Supreme Court.

SYLLABUS.

---

1. Where there was evidence that fracture of steel oil storage tank owned by plaintiffs was caused by normal pressure from weight of huge mass of oil stored within it against steel plates forming tank walls, which had become brittle because of cold weather, and which were in area where door had been installed after construction of tank, and there was no evidence that some sudden or violent increase of internal pressure within tank had caused such fracture, *held,* jury's finding that fracture of tank was not due to an *explosion* as covered by insurance policies is sustained by evidence.

2. Where court instructed jury with respect to popular

meaning or understanding of term explosion and included within such instructions substance of several definitions of term set forth in plaintiffs' requested instructions, *held,* court was not required to give in detail and in exactly same language requested by plaintiffs other definitions of the term.

3. Where policies of insurance insured plaintiffs against damages arising from "explosion" of its oil storage tanks, but contained no definition of term "explosion" and made reference to it only to the extent of stating that "[c]oncussion unless caused by explosion" and certain other mishaps were not to be regarded as explosions, *held,* court did not err in denying jury's request that it have such policies in jury room to aid it in determining whether explosion had occurred, particularly where court had instructed it as to definition or meaning of term.

4. Where, over objection, court erroneously received evidence with respect to other insurance carried by plaintiffs which insured plaintiffs against loss by reason of ruptured or fractured storage tanks and counsel for defendants in final argument to jury made reference to such other insurance, but plaintiffs' counsel stated that plaintiffs did not wish for a mistrial because of such procedure and requested corrective instructions instead, and court then instructed jury that additional insurance carried by plaintiffs had no bearing on case and that jury's only duty was to decide if there had been an explosion, it cannot be said that court abused its discretion in denying plaintiffs' motion for new trial based upon errors in procedures described.

AFFIRMED.

OPINION:

THOMAS GALLAGHER, *Justice.*

Action by Honeymead Products Company, which operates a soybean oil storage and processing plant in Mankato, and Farmers Union Grain Terminal Association, lessor of the processing facilities, against some 60 insurance companies for approximately $3,000,000 damages which plaintiffs claim resulted from the "explosion" of a steel oil storage tank (referred to hereinafter as the No. 1 tank) in Mankato; and which they claim were within the coverage of defendants' insurance policies against "direct loss by * * * Explosion."[1] The jury determined that plaintiffs' damages were not the result of an "explosion" of the tank referred to, and from an order denying their alternative motion for judgment notwithstanding the verdict or a new trial plaintiffs take this appeal.

Plaintiffs contend (1) that the court should have instructed the jury as to various meanings of the word "explosion" as it is commonly understood—that "explosion" could mean "a bursting with great noise and violence"; "bursting noisily"; "a bursting"; "a violent expansion or bursting with noise," because explosions are commonly understood to include such factors; (2) that the court should

1. Each of the policies contained a section entitled "Provisions Applicable Only to Explosion." They included the following provisions:

"The following are not explosions within the intent or meaning of these provisions:

"(a) Concussion unless caused by explosion,

"(b) Electrical arcing,

"(c) Water hammer,

"(d) Rupture or bursting of water pipes.

"Any other explosion clause made a part of this policy is superseded by this endorsement."

have further instructed the jury as to the meaning of the word "explosion" when it requested additional advice with respect thereto; (3) that the court should have permitted the jury to examine the insurance policies; and (4) that the court should not have received testimony with respect to other insurance of plaintiffs against loss of oil by reason of "Fracture, Rupture — Anything That Would Cause a Discharge or Leakage of the Oil Except 'Explosion'."

Each of defendants' policies included identical sections insuring plaintiffs against loss resulting from the "explosion" of their oil storage tanks and provided further that "[c]oncussion unless caused by explosion" is not an explosion "within the intent or meaning of these provisions."

The accident occurred January 23, 1963. At that time, plaintiffs' No. 1 tank, with a capacity of 3,600,000 gallons was filled to a level of 32 feet 6 inches with 2,800,000 gallons of soybean oil which weighed approximately 7.7 pounds per gallon for a total weight of 21,560,000 pounds. This tank was 116 feet in diameter and 40 feet 6 inches high. It was made with a steel bottom and covered by a light conical steel roof. Its walls were made up of steel plate courses welded together, varying in thickness from 5/8 of an inch at the bottom course to 3/16 of an inch at the top. It was erected in Mankato in 1955 from used steel plate reclaimed from an old tank built in Oklahoma in 1929. In 1961 an opening measuring 8 by 8 feet had been cut in the bottom steel plates of this tank so as to permit a front-end loader to enter it for cleaning purposes. An oil-tight door for this opening was also installed some months later.

On the date of the accident the outside temperature was minus 21 degrees Fahrenheit. At about 9:15 a. m. on that date, the steel plate walls of the tank suddenly burst apart, ripping and tearing an opening on a line perpendicular

to the door and extending upward from its top for a distance of approximately 30 feet, and thence tearing at right angles laterally about 90 degrees in both directions so that the steel plates were bent backwards "like doors or wings." The 2,800,000 gallons of soybean oil were suddenly released at that time and came rushing out "like water through a broken dam," causing the loss and damages for which this action was brought.

Witnesses who were in the near vicinity of the occurrence testified that the bursting of the tank was accompanied by what was described variously as "a terrible noise * * * regular rumble"; "far away thunder"; "a dynamite blast * * * off in the distance"; "a sonic boom"; a "rumble like thunder"; "a whoom"; "a report or bursting * * * a real crack"; a "roar-like * * * loud"; "a large boom."

There was testimony that no glass windows or other like objects were broken in any of the houses adjacent to the tank and that there was no evidence of burning, charring, or combustion of the oil or of any substance in or around the tank, or that any property was damaged in the vicinity other than by the massive flow of oil which followed the rupture of the tank.

Honeymead's executive vice president, Mr. Lowell Andreas, on the afternoon of the explosion wired the Chicago Board of Trade as required by its rules as follows:

> "We wish to report the rupture of our soybean oil storage facility at Mankato, Minnesota, resulting in the substantially total loss of soybean oil under Chicago Board of Trade warehouse receipts, * * * at approximately 9:00 a. m., January 23, 1963, loss has been reported to the insurance carrier."

Expert witnesses called by defendants testified that in their respective opinions the tank had burst when the extreme cold weather had caused the steel plate walls to lose

most of their ductile qualities and to become brittle; that in addition the front door opening had produced stress concentration points, especially at the corners of the door where about 353,800 pounds of force had been concentrated; and that the cold weather which caused the metal to become brittle had produced a phenomenon known as "cold weather fracture" at such pressure points. They testified further that after the tank had ruptured at the upper corners of the door the break had extended upward at a speed of between 2,000 and 2,500 feet per second.

Defendants presented other experts who testified with respect to the characteristics of an "explosion." One such witness testified that a characteristic of an explosion is a sudden increase in pressure, generated by the sudden formation of gas and giving off of heat, and that while ordinarily noise accompanies an explosion neither the presence of the noise, vibration, nor the release of energy would necessarily mean that an explosion had occurred, citing as an example the breaking of a dam followed by the sudden release of water, which is usually accompanied by noise and a release of energy but is not regarded as an explosion.

An expert called by plaintiffs testified that an increase in internal pressure is not necessary to an explosion and that "[t]he characteristics of an explosion, whether caused by chemical or physical means, is a sudden expansion or bursting associated with noise, with a sudden release of energy which has the capacity of doing great damage."

Mr. Harold Groh, Honeymead's assistant secretary, testified that engineers employed as inspectors by the Fire Underwriters Inspection Bureau had inspected the tank on three occasions between the time when the door was installed and the accident and that the inspection bureau

had never made any recommendation that the structure should be modified.

During cross-examination he was asked:

> "Q. Now you were also required to obtain insurance for Honeymead against the peril of this tank being ruptured or fractured by some reason other than explosion. Isn't that a fact?
>
> "Mr. Leonard [counsel for plaintiffs]: If the Court please, that's objected to as being wholly immaterial to any issue in this case.
>
> "The Court: I think that may not be material to this case but he may answer the question.
>
> "Q. (By Mr. Gorman, continuing) [counsel for defendants] Isn't that a fact, sir?
>
> • • • • •
>
> "A. Yes.
>
> "Q. And you did have insurance at the time of this occurrence protecting Honeymead insofar as tank No. 1 is concerned against the loss of the oil from that tank by reason of fracture, rupture—anything that would cause a discharge or leakage of the oil except explosion.
>
> • • • • •
>
> "Mr. Leonard: Same objection, Your Honor.
>
> "The Court: Overruled.
>
> "Q. (By Mr. Gorman, continuing) Isn't that so?
>
> "A. Yes.
>
> • • • • •
>
> "Mr. Leonard: This is highly prejudicial. If this wasn't so important, Your Honor, I would move for a mistrial • • •. I respectfully request the Court to instruct the jury to disregard the question and to sustain my objection to its materiality • • •."

At the close of the testimony, plaintiffs submitted written requests for instructions which included the following:

> "• • • [T]he sole question for you to answer is whether there was an explosion of Tank 1. In deciding this question, you are instructed the word ex-

plosion is an idea of degree and the meaning of the word in each case must be settled not by any fixed standard or accurate measurement but by the ordinary use of the word, the common experience of men and their general notions in matters of this sort. The word is to be construed in its popular sense, that is, as ordinary men, not scientists, use and understand it.

* * * * *

"The word explosion is variously defined * * *: One definition is:

"A violent bursting with noise following a sudden release of pressure, as in the destruction of a steam boiler.

* * * * *

"Another definition is:

"A sudden violent bursting or breaking caused by internal force and accompanied by a sudden or rapid expansion of air and a sharp noise or report.

* * * * *

"Even noise is not required for finding an explosion although explosions may be and usually are accompanied by noise.

* * * * *

"Many of the above definitions do not require combustion or smoke, or fire, or charring or heat, or the presence of gases or the ignition of any volatile substance, or the increase of internal pressure and none of these things are required in this case.

* * * * *

"'Explosions are characterized by release of energy so rapid as to appear substantially instantaneous. An explosion is an effect, not a cause.'"

In his final argument, counsel for defendants stated:

"* * * Mr. Harold Groh * * * has testified * * * he had to have rupture insurance, fracture insurance; the peril of discharge of this oil other than from the cause of explosion. This company had insurance covering this."

After this statement the following occurred:

"Mr. Leonard: * * * [D]uring counsel's argument, counsel stated and made quite a reference to the fact of other insurance. This is, by an order of this Court, not an issue in this case. His comment was highly contemptuous, highly prejudicial and would be grounds for a mistrial. * * * [P]robably the only thing we can do at this stage, and I want to reserve my position more fully for a later occasion, is to request, Your Honor, to state to the jury that there is no evidence in this case with reference to other insurance coverage, and that the comment by counsel should, therefore, be disregarded as not a proper statement to have been made."

With respect to the meaning of the term "explosion" the court instructed the jury as follows:

"The plaintiffs do not have to prove how the explosion occurred, if they do so prove. * * *

"Now the word explosion does not always mean the same thing at every time. It has been used to describe many kinds and types and degrees of occurrences. Its general characteristics may be set out, but the exact facts which constitute what we call an explosion cannot always be stated so as to distinguish the occurrence.

"There is no fixed standard or accurate measurement, either in ordinary speech or in the law—we must then go to the ordinary use of the word in its popular sense.

"I told you that the policies of insurance provide coverage for loss by explosion. When the word explosion was used in the policies, the officers or the agents of the defendant insurance companies, as ordinary people, and the plaintiffs who were insured as ordinary people, would be presumed to have used and understood the word in its ordinary and popular sense.

"For your guidance then, the word explosion is defined as the act of exploding; detonation, a violent bursting or expansion with noise, following the * * *

sudden release of pressure, as in the disruption of a steam boiler. Also a noise made by such bursting."

With respect to the testimony and argument of defendants' counsel as to rupture or fracture insurance covering the peril of discharge of oil from causes other than explosions, the court instructed the jury as follows:

"* * * You are aware from the evidence that other insurance was carried by the plaintiffs. That has no bearing in considering this case, and your only duty here is to decide if there was an explosion. If there was your verdict will be for the plaintiffs, if not, for the defendants."

After the jury had first retired, it returned for further instructions and the following occurred:

"Mr. Ballard (foreman): * * * We are having difficulty determining the meaning of the word explosion, as it can be interpreted two or three different ways * * *.

"The Court: * * * [T]he Court did state that the word explosion could be interpreted several different ways, and gave you one explanation of it.

"I think you will have to draw from all the evidence you have heard, all the descriptions which may have been given to you, and as I told you, from your experience in life, to make the determination upon that.

* * * * *

"Mr. Ballard: * * * [T]here is some question about the insurance papers that are involved in this case.

"The Court: * * * [T]he Court determined early in the case that the policies would not be necessary for the jury's determination, since * * * your only determination would be whether or not there was an explosion. If, as I told you earlier, there was an explosion * * * the policies of insurance would cover, and then your verdict would be for the plaintiffs.

"If there was not an explosion * * * then the policies would not cover, and your verdict would be for the defendants."

1. The evidence clearly establishes that plaintiffs' damages were the result of a fracture of the steel plates forming the walls of the No. 1 tank and that this was in turn caused by pressure which arose from the weight of the oil stored within the tank as applied against the brittle steel in the area where the door had been constructed. The fracture permitted release of the massive oil contents within the tank with resulting noise and destruction. There was no evidence of any sudden or violent *increase* of internal pressure commonly associated with an explosion. While this court has not had occasion to pass upon the meaning of the word "explosion" as used in insurance policies of the type here involved, a number of jurisdictions have considered the question. In *Aetna Cas. & Surety Co.* v. *Osborne-McMillan Elev. Co.* 26 Wis. (2d) 292, 299, 132 N. W. (2d) 510, 513, involving the rupture of grain storage containers, the court stated that—

> "* * * explosion as applied to * * * contents of a container must include the element of an active force independent of or in addition to the force of weight and height of the contents which seek a sudden and violent release by breaking the container. Static or potential force or pressure resulting only from the weight of the contents in a container may cause a container to split open and release the contents but such an occurrence is hardly looked upon by the average person to be an explosion.
>
> * * * * *
>
> "* * * We do not agree * * * that all ruptures and burstings of containers * * * are explosions. * * *
>
> "There seems to be little dispute in the cases that an explosion as commonly understood is not one element such as an increase in pressure or noise or a result such as a fractured container, but the sum total of several elements not the least of which consists of an active force which suddenly and violently exerts itself in some form. * * * In cases of confined substances if the container fails because of structural

> weakness so as to let out the contents as distinguished from the contents bursting out because of its force, there is no explosion even though it might be said the tank ruptured or burst open. * * * In explosions involving a nonexplodable substance there must be an internal active force created which breaks out of its confinement. In the case of grain such active force must be in addition to that of the normal static force exerted on the inside of a container because of the weight and position of the grain."

Decisions of a number of other courts are similar. Thus, in *American Cas. Co.* v. *Myrick* (5 Cir.), 304 F. (2d) 179, 183, it was said:

> "Although the cases admit that 'explosion' is a term insusceptible of fixed definition, they make it clear that in order for an occurrence to constitute an explosion there must be a sudden breaking forth of a confined substance as a result of an *internal force* * * *." (Italics supplied.)

Likewise, in *Peterson* v. *Royal Ins. Co.* 251 N. C. 61, 64, 110 S. E. (2d) 441, 443, the court stated:

> "Internal pressure causing a sudden expansion resulting in bursting or disruption are essential elements of an explosion."

In *Hulcher Soya Products, Inc.* v. *Millers' Mutual Fire Ins. Assn.* 5 Ill. App. (2d) 235, 124 N. E. (2d) 570 (a memorandum decision) the record disclosed that there was no direct evidence of a sudden development of an internal force or that the incident which was characterized by plaintiff as an explosion was accompanied by a rapid or sudden expansion of air.

So here the fact that normal pressure from the stored oil caused the plates to fracture would appear to rule against any finding that the fracture was due to an "explosion" caused by a sudden or violent increase of pressure from within the tank.

2. Plaintiffs contend that they were entitled to instructions giving the jury many additional definitions of the term "explosion." The court did instruct it as to the popular meaning of the term and incorporated in its instructions many of plaintiffs' suggested definitions, even though they were phrased in different terms. Thus, when the court explained that an explosion is defined as an "act of exploding; detonation, a violent bursting or expansion with noise, following the sudden production of great pressure," this was reasonably within plaintiffs' requested instruction that an explosion could mean: "A bursting with great noise and violence"; "[b]ursting noisily"; "[a] bursting"; "a violent expansion or bursting with noise."

We find no decisions which hold that multiple definitions of a word or term involved in a contract or policy must be given to the jury. Rather, some definition within the popular concept of the term in issue seems to be appropriate. Had additional definitions been given, the multiplicity might well have resulted in confusing the jury. Based on the evidence and the principles ordinarily applicable, we conclude that the instructions here, when considered as a whole, were without error and conveyed to the jury a clear concept of its responsibility in arriving at a decision. See, *Barnes* v. *Northwest Airlines*, 233 Minn. 410, 47 N. W. (2d) 180.

3. It is contended that the trial court erred in refusing to permit the jury to have possession of the insurance policies during its deliberations. Examination of such policies reveals nothing which would have been of assistance to the jury in determining the fact issues involved. The only references therein to the term "explosion" are that the properties of plaintiffs were insured against loss resulting from the explosion of oil storage tanks and that concussions, unless caused by explosion, and other defined mishaps were not to be regarded as explosions within the intent or mean-

ing of the policies. From this it seems clear that possession of the policies would not have aided or assisted the jury in arriving at a conclusion. It is well established that the construction of words and clauses as used in insurance policies ordinarily is a matter of law for the court rather than a question of fact for the jury. 29A Am. Jur., Insurance, § 1946. See, also, *Bauman* v. *Midland Union Ins. Co.* 261 Wis. 449, 53 N. W. (2d) 529; *Tires, Inc.* v. *Travelers Fire Ins. Co.* (4 Cir.) 253 F. (2d) 411. Accordingly, here the function of the court was to instruct the jury as to the meaning of the word "explosion" and submit whether under the definition given an explosion had occurred. This was exactly the procedure followed, and we find no error therein.

4. Plaintiffs contend that there was error in the admission of evidence indicating the existence of insurance policies which insured plaintiffs against loss by reason of ruptured or fractured tanks, and in the statements in the final argument of defendants' counsel pointing out the existence of such insurance to the jury. When this evidence was received over objection the court justified its admission on the theory that since plaintiffs' counsel had inquired of its witnesses as to inspection of the newly installed door by inspectors of other insurance companies, this gave defendants the right to establish that, notwithstanding such inspections, the installation of the door may have been defective. While defendants no doubt had the right to inquire as to the scope and purpose of the inspection referred to, it seems clear that this would not justify questions which brought to the attention of the jury the fact that plaintiffs carried insurance which protected them against loss due to fracture or rupture of the tanks. However, the procedure, adopted at the request of plaintiffs' counsel, which followed both the admission of this evidence and the final argument of defendants' counsel would

seem to have been adequate to correct the errors described. As indicated above, at both such times plaintiffs' counsel made clear to the court that plaintiffs did not seek a mistrial because of the errors described but would be satisfied with an instruction which would correct any impression of the jury that the other insurance might have some bearing upon its consideration of the case. The court complied with this request and plainly charged the jury that it should not consider the evidence concerning such insurance and that its "only duty" was "to decide if there was an explosion."

On a number of occasions we have held that a new trial should not be granted for the erroneous admission of evidence where the court has distinctly instructed the jury to disregard it. *Zuber* v. *N. P. Ry. Co.*, 246 Minn. 157, 74 N. W. (2d) 641; *Mutual Service Cas. Ins. Co.* v. *Overholser*, 239 Minn. 243, 58 N. W. (2d) 268; *Walker* v. *Stecher*, 219 Minn. 152, 17 N. W. (2d) 317; *Arnold* v. *Northern States Power Co.*, 209 Minn. 551, 297 N. W. 182. While it is true that in some instances the erroneous admission of evidence has compelled reversal notwithstanding a corrective instruction with respect to such evidence, *Jeddeloh* v. *Hockenhull*, 219 Minn. 541, 18 N. W. (2d) 582; *Evans* v. *Chicago, M. & St. P. Ry. Co.*, 133 Minn. 293, 158 N. W. 335, nevertheless each case must be judged on its own particular facts; and here where the issue relates to the exercise of the trial court's discretion in denying plaintiffs' motion for a new trial, *Manahan* v. *Jacobson*, 226 Minn. 505, 33 N. W. (2d) 606, under the facts above recited we cannot see where there was any such abuse.

AFFIRMED.

MR. JUSTICE SHERAN took no part in the consideration or decision of this case.

EXCERPT FROM BRIEF OF PLAINTIFFS-APPELLANTS IN SECOND OSBORNE APPEAL.

A.

The Rules of Law Laid Down by This Court, Adopted and Further Defined by the Supreme Court of Minnesota, Require That for an Occurrence to Constitute an Explosion It Is Necessary That There Be a Sudden and Violent Increase of an Internal Force Which Causes the Initial Fracture of a Container Wall.

The Two Governing Decisions:

The opinion rendered by this Court upon the prior appeal, following *Bauman* v. *Midland Union Insurance Company,* 261 Wis. 449, 53 N. W. 2d 529 (1952), again applied judicial focus upon the essential elements of "explosion" as applied to a container filled with a non-explodable substance. Subsequent to this Court's opinion in 1965, the Supreme Court of Minnesota has also considered, as a case of first impression, the question of "explosion" as applied to a steel storage tank, and on October 28, 1966, rendered its opinion in *Honeymead Products Co., et al.* v. *Aetna Casualty & Surety Co., et al.,* yet unreported.

The Minnesota Court not only adopted this Court's ruling that an internal force was necessary to constitute an explosion, but went further and ruled that the "active" requirement stated by this Court meant a sudden and violent increase in internal force or pressure (*Honeymead* opinion, Addendum, pp. 11, 12).

Throughout the case at bar, it has been accepted that the "explosion" issue was to be controlled by the substantive

law of Minnesota (See 26 Wis. 2d 292, 299; 132 N. W. 2d 510, 513).

Summarizing Wisconsin and Minnesota law, which are now in accord, an event cannot be judicially recognized as an "explosion" in the absence of proof that there was a sudden and violent increase (active) of an internal force. *The mere breaking or bursting apart of a container even though sudden and violent, is not an "explosion"; the "explosion" is an integral process whereby a sudden and violent increase of an internal pressure itself breaks the container.* These views are clearly expressed both in the earlier opinion of this Court and now in *Honeymead.*

As this Court said in its earlier opinion (132 N. W. 2d 510, 513; 26 Wis. 2d 292, 299):

> "* * * explosion as applied to * * * contents of a container must include * * * an active force * * * *which seeks a sudden and violent release by breaking the container.* * * *." (Emphasis supplied.)

and *ibid.*, 302:

> "* * * In explosions involving a non-explodable substance there must be an internal active force created *which breaks out of its confinement.* * * *" (Emphasis supplied.)

This view reflects the popular understanding, and found complete approval and concordance in *Honeymead.*

The question whether the wheat in such compacted condition possessed an elastic quality was immaterial and a spurious issue, for Respondent's evidence itself shows that the measurement of the pressure which may have been present at the surface of the grain next to the tank wall was no more than passive resistance to contraction, took no active part in the fracture of the wall itself, and certainly

was not a sudden or violent increase as required by the *Honeymead* case.

Even if it be assumed that the wheat did expand an insignificant degree *after* the wall had already been shattered from a cold weather brittle fracture resulting from magnified stress in the metal, such subsequent alleged expansion was of no materiality in determining the issue of "explosion". *The whole issue of alleged elasticity of wheat is thus shown to be immaterial and irrelevant.*

Since the rules of law established by both this Court and the Minnesota Court remove from the concept of "explosion" the variety of catastrophes commonly regarded as "structural failures", we contend that the Respondent's proof taken as a whole merely establishes that the destruction of its tank was a "structural failure" and not an "explosion".

* * * * *

The totality of Respondent's evidence fell far short of the essentials insisted upon by the two governing decisions. Respondent wholly failed to prove that there was an active internal force independent of or in addition to the forces of weight and height of the contents *which sought a sudden and violent release by breaking the container*, and which was a sudden and violent increase of internal pressure *which broke out of its confinement.*

That this Court, in speaking of an active internal force was referring to the *expansion* of some substance inside the container is made amply clear for this Court, in its opinion (26 Wis. 2d 292, 304; 132 N. W. 2d 510, 515, 516), adopting the reasoning in *Tires, Inc.* v. *Travelers Fire Ins. Co.*, 253 F. 2d 411, said:

> "* * * Explosion used in 'its ordinary sense and related to the common experience of man presupposes that there is first of all a building up of pressure from within or from some internal force, that because of this

> internal building up of pressure and as a direct result thereof *there is an expansion,* the pressure can no longer be contained and there is a bursting forth from within caused by an internal force with a possible violent noise and reaction.' " (Emphasis supplied.)

That the Minnesota Court, in speaking of a "sudden or violent increase of internal pressure" was also referring to the *expansion* of some substance inside the container is made amply clear by the fact that that Court, in its opinion (*Honeymead* Opinion, Add. *post,* p. 12) adopted the reasoning of *Hulcher Soya Products, Inc.* v. *Miller's Mutual Fire Insurance Co.,* 5 Ill. App. 2d 235, 24 N. E. 2d 570 (Add. *post,* pp. 16-21), in which that court held that the insured had failed to prove any existence of an explosion when it failed to produce evidence of a sudden development of an internal force, or that the occurrence was accompanied by a rapid or sudden *expansion* of air, and the reasoning in *Peterson* v. *Royal Insurance Co.,* 251 N. C. 61, 64, 110 S. E. 2d 441, 443, where that court stated that an internal pressure causing a sudden *expansion* resulting in bursting or disruption is the essential element of an explosion.

In conclusion, appellants contend that the essential element required by this Court of an active internal force causing the initial fracture, which element has now been held by the Minnesota Court to require a sudden and violent increase of internal pressure, has not been met by the proof offered by Respondent in the Court below. The structural nature of the cold weather brittle fracture remains conceded, and the existence of any internal pressure arising from the elasticity of the wheat has been shown by respondent's own testimony (1) to be immaterial to the initial fracture, (2) not to have been sudden or violent and (3) to have been at most a passive resistance to the active pressure of the constricting wall, a circumstance which became effective only *after* the initial fracture of the container.

STATE OF WISCONSIN.

IN THE SUPREME COURT.

August Term, 1966—No. 230.

AETNA CASUALTY AND SURETY COMPANY, *et al.*,
Appellants,

vs.

OSBORNE-McMILLAN ELEVATOR COMPANY,
Respondent.

ARGUMENT IN SUPPORT OF APPELLANTS' MOTION FOR REHEARING.

MAY IT PLEASE THE COURT:

In support of appellants' motion for rehearing heretofore filed herein, appellants respectfully urge:

1.

This Court, in Its Opinion of June 9, 1967, Failed to Give Full Faith and Credit to the Law of Minnesota, as Recently Determined in Honeymead Products Co., Inc. v. Aetna Casualty and Surety Co., et al.

This Court said in its second opinion* (p. 7):

> "We do not read the Honeymead decision as modifying our first opinion or holding an explosion can only occur if there is a sudden or violent increase of internal pressure in the tank."

*References to this court's opinion rendered June 9, 1967 on the second appeal, will designate the page number of the typewritten opinion.

With all due respect to this Honorable Court, we desire to point ou that the *Honeymead* decision plainly requires that, before an event can be regarded as an explosion in Minnesota, the internal pressure in the tank *must* undergo a *sudden and violent increase.* In the case at bar, concededly, the alleged *increase* of active internal pressure, if it existed at all, in the tank, *was neither sudden nor violent.* The *ultimate release* of the 18,000,000 pounds of wheat was undoubtedly sudden, and was certainly accompanied by subsequent violence, but the indispensable ingredient required to characterize the event as "explosion", *any sudden and violent increase of the internal pressure, was patently absent here.* That *Honeymead* cannot be read or interpreted other than requiring a *sudden* and violent increase of internal pressure as an indispensable ingredient is clear. The Supreme Court of Minnesota, in its opinion, in considering the propriety of the definition of "explosion" given to the jury, approved the following definition and said that it incorporated the popular meaning of the term (146 N. W. 2d 522, p. 529), such instruction being as follows:

> "An act of exploding, detonation, a violent bursting or expansion with noise, *following the sudden production of great pressure.*"

Therefore, under Minnesota law, as now expressed in *Honeymead,* the creation of the active internal pressure, which breaks the containing structure, must be *suddenly produced.*

Insistence by Minnesota upon the presence of such essential ingredient is amply confirmed by reference to the decisions upon which that court relied in arriving at its conclusion. For example, in *Peterson* v. *Royal Insurance Co.,* 251 N. C. 61, 64, 110 S. E. 2d 441, 443, the court said (quoted in *Honeymead,* 146 N. W. 2d 522, 528):

"An internal pressure causing a *sudden expansion* resulting in bursting or disruption are essential elements of an explosion." (Emphasis ours.)

Likewise in *Hulcher Soya Products* v. *Millers Mutual Fire Insurance Assn.*, 5 Ill. App. 2d 235, 124 N. E. 2d 570 (a memorandum decision) relied on by Minnesota the Illinois court held that *no explosion was proved* by the claimant *where the record disclosed no direct evidence of a sudden development* of an internal force, or that the incident, which was characterized by the claimant as an "explosion", was accompanied by *a rapid or sudden expansion of air.* Any hint of such evidence is glaringly absent in the case here.

Since the Minnesota Supreme Court determined the trial court's instruction (quoted above) to be entirely proper, and in so arriving at such conclusion relied upon *Peterson* and *Hulcher* it is now Minnesota law that for an event to be characterized as an "explosion", the expansion or increase of internal pressure, which also necessarily must cause the original fracture of the container, *must be suddenly produced.* Moreover, such concept is squarely in line with common knowledge concerning "explosions."

The views expressed by this Court on the second appeal are flatly contrary to the now plainly expressed law of Minnesota. This Court has held that "suddenness" is required only in the release of pressure (Opinion, p. 7); this Court held that the active internal force need not be *suddenly produced.* The holdings of this Court are not compatible or reconcilable with the Minnesota law.

Therefore, we respectfully contend that this Court mistakenly interpreting Minnesota law as not requiring that

the increase of internal force be a sudden increase, has reached a holding patently contrary to the governing Minnesota law.

To the extent that this Court has failed to apply the law of Minnesota as expressed in *Honeymead,* this Court has plainly failed to give full faith and credit to the governing law of a sister State, which concededly controls here, and has thus deprived the appellants of their rights guaranteed by Section 1 of Article IV of the United States Constitution. The law is so familiar and well settled to the effect that a court of one state must give full faith and credit to both the statutory and substantive law of a sister state that no citation of authority is required here.

The result reached by this court in its second opinion has done violence to plaintiffs' constitutional rights. We are certain that this Court in arriving at its final result in this case will want to assure itself that the ultimate result reached here conforms to law. Neither the views expressed, nor the result reached in the second opinion achieved this indispensable end.

• • • • •

WILLIAM C. HASTINGS
DISTRICT JUDGE
Third Judicial District
Lincoln, Nebraska 68508

September 18, 1967

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In Re: Aetna Casualty & Surety Co. et al. vs. Garvey Elevators, Inc., etc. Docket 223, Page 205

Aetna Casualty & Surety Co. et al. vs. Petroleum, Inc., A Corporation Docket 223, Page 206

Aetna Casualty & Surety Co. et al. vs. Garvey Elevators, Inc., etc. Docket 223, Page 207

GENTLEMEN:

In order to arrive at a decision in these cases, it is necessary to define the word "explosion" as used and understood in its ordinary and popular sense. Various attempts have been made by the Court to arrive at a satisfactory definition. For the purpose of these cases, the Court has used the following: "An explosion is a violent bursting or

expansion with noise following the sudden production of great pressure, or a sudden release of pressure, caused or contributed to by an active internal force." See *Lever Bros. Co.* v. *Atlas Assurance Co.*, C. C. A. (Ind.), 131 F. 2d 770, and *Aetna Casualty and Surety Co.* v. *Osborne-McMillan Elevator Co.* (1965), 26 Wisc. 2d 292, 132 N. W. 2d 510; and the second trial (1967), 151 N. W. 2d 113. As pointed out in the latter case, "It is not only the weakness of the container which must be considered, but also the strength of the internal force. The explosion *per se* is more an effect than a cause, although it in turn can be the cause of other damage."

The evidence in these cases leaves no doubt, and as a matter of fact all parties seem to agree, that the bursting of the tank was almost instantaneous; started at a fault or weakness of a weld joint; that it was accompanied by a great noise and the release of a large amount of pressure; and resulted in damage not only to the tank but to the surrounding area. A contributing factor was a contraction of the steel plates caused by a sudden drop in temperature which exerted a force against the stored grain.

The fact that the initial break commenced at an imperfect weld is not important. Weakness or fault is a comparative term. If there is an explosion of a container it must be because the container, at some one or more points, was weaker than the force exerted. The explosion must start someplace.

Really, the only dispute between the parties is as to the presence of an active internal force. The plaintiffs contend that the pressures were formed by the weight and position of the grain, and the passive resistance of the grain when subjected to the force or pressure of the contracting steel tank wall.

The defendants insist that the grain possessed a modulus of elasticity; that when compressed by the contracting steel plates, it contained a "desire" to return to its original shape which manifested itself in an active force or pressure back against the wall. This, it seems to the Court, is the more reasonable explanation.

Accordingly, the Court finds that the various occurrences were explosions within the definition set forth above and the terms and provisions of the insurance policies. Therefore, the defendants are entitled to recovery in the various amounts prayed for and as supported by the stipulations, and costs of these proceedings. Counsel for the defendants should prepare the appropriate Journal Entries in each instance.

Very truly yours,

WILLIAM C. HASTINGS,
District Judge.

WCH-AW

IN THE DISTRICT COURT OF SEDGWICK COUNTY, KANSAS.

THE AETNA CASUALTY AND SURETY COMPANY, a Corporation, *et al.*, *Plaintiffs*,

vs.

SIERRA PETROLEUM CO., INC., a Corporation, *Defendant.*

Case No. B-20288
Division No. 3.

FINDINGS OF FACT.

This action was commenced for declaratory judgment by forty-four insurance companies (The Aetna Casualty and Surety Company, a corporation, et al., Plaintiffs), hereinafter referred to as *Aetna*, to determine their liability, if any under insurance policies issued by plaintiffs to Sierra Petroleum Co., Inc., hereinafter referred to as *Sierra*.

The above-entitled action was called for trial to the Court on June 26, 1967, and the trial continued from day to day until completed. By agreement of the parties, and with the consent of the Court, the trial was confined to the single issue of liability or nonliability of the plaintiff insurors under the terms of the policy of insurance in question. All issues relating to the extent or amount of recoverable damage and the claim of the defendant to the recovery of attorney fees is reserved for later determination.

The single factual issue presented for determination at this time is whether the destruction of the steel grain

tank and the consequent damage can properly be said to have resulted from an explosion within the meaning of that term as used in the policy of insurance which, admittedly, was in force between the parties at the time of the occurrence.

The Pre-Trial Order contains extensive stipulations of fact, all of which the Court accepts and has considered. These stipulated facts are to be regarded as a part of the Court's Findings of Fact notwithstanding that most of them are not repeated here. In order that further Findings of Fact and the Conclusions of Law may read understandably, the Court summarizes the following from the stipulations of the Pre-Trial Order:

> The grain tank in question was a circular tank constructed of welded steel plates. It was 142 feet in diameter with side walls 64 feet in height. The roof of the tank was conical in shape and constructed of light gauge steel. The tank had a rated capacity of 1,000,000 bushels of grain and at the time of the occurrence in question was nearly full, containing 905,000 bushels of wheat which weighed 54,300,000 pounds. The height of the grain on the side wall of the tank at the time of the occurrence was approximately 56 feet above the floor.
>
> On December 11, 1962, at approximately 3:40 a.m., the steel side wall of the tank fractured or split from bottom to top. In the twelve-hour period immediately preceding this occurrence, the temperature dropped approximately 25°, from a high of 33° F. at 3:00 p. m. on the afternoon of December 10, 1962, to 8° F. at 3:00 a. m. on the morning of December 11, 1962.

Further facts now found by the Court from the evidence and considered, in addition to all of the facts stipulated in the Pre-Trial Order, are the following:

1. The action brought by the defendant against Ap-

palachian Insurance Co. of Providence in the United States District Court for the District of Kansas, Case No. T-3276, appears to have been one brought primarily for the purpose of enforcing Sierra's right to the issuance of a proper policy which, according to the contention of defendant, would have subjected Appalachian Insurance Co. to liability for the loss of the grain tank in question unless recovery from Appalachian would have been precluded by a provision properly in the policy to the effect that the insured could not recover from Appalachian to the extent any loss was covered by other insurance. There was no clear assertion and no adjudication in the Appalachian case that the grain tank in question was not destroyed as the result of an explosion and the Court finds that the pleadings and papers offered or received in evidence with respect to that litigation do not contain any admissions or statements on the part of the defendant here which would foreclose its right to recover against the plaintiff insurors. Furthermore, there is no evidence tending to show that the plaintiffs in any way changed their position in reliance upon any claims, statements or pleadings made by defendant in the case against Appalachian.

2. Prior similar occurrences examined by the experts who testified at the trial appear, almost without exception, to have involved a combination of three critical factors which are present here: (1) a steel tank of large proportions; (2) a tank almost full of grain; and (3) a sharp drop in temperature immediately preceding the rupture.

3. At the time of the occurrence the circular steel wall of the tank was forced open in a manner described by expert witnesses as "winging out" allowing the grain to spread out on the ground about the tank. The steel walls were twisted, bent and separated in such a manner as to exhibit the fact that great forces were involved in fracturing the steel wall and forcing it apart. Witnesses residing in

the neighborhood at distances of three-quarters to one and one quarter mile of the installation were awakened at the time of the occurrence by a sound which resembled a "blast" or an "explosion."

4. It is conceded by all the experts that steel contracts a known quantity for every degree of drop in temperature, and when exposed to low temperatures such as the 8° which existed on December 11, 1962, the day in question, steel is extremely brittle.

5. The testimony of the experts is to the effect, and the Court finds, that the fracture or splitting of the tank wall from bottom to top occurred and was completed in a fraction of a second, with estimates by various experts ranging from 1/78th to 1/100th of a second.

6. Upon, or immediately following, the fracture or splitting of the wall, the pressure or stored energy caused by the confinement of the grain and the pressure it exerted upon the wall of the tank was released.

7. In the twelve-hour period during which the temperature dropped approximately 25° F., the circular steel wall of the tank cooled at approximately the same rate. Wheat is a poor conductor of heat, with the result that the wheat did not cool to any appreciable extent during the twelve-hour period of temperature drop. As the result of cooling, the steel wall of the tank shrunk or constricted approximately 3 inches in circumference and ½ inch in diameter. This shrinkage reduced the inside volume of the tank, and therefore the space available to be occupied by 905,000 bushels of wheat, by approximately 520 cubic feet.

8. Various tests were made prior to trial by expert witnesses in an effort to determine whether a mass of grain exhibits the property of elasticity or, in the terminology of the expert witnesses, whether a mass of grain has a "modulus of elasticity." The Court finds and believes

from the evidence that a mass of grain does, in fact, have a modulus of elasticity and that the mass exhibits the property of elasticity, which is to say that when compressed, a mass of grain exerts some force or desire to return to its original shape or volume. In this respect, and on this issue, the Court credits testimony of the defendant's witness Crawford and views the tests performed by Crawford as the most acceptable and reliable. These tests reveal that a mass of grain, if confined and subjected to pressure will shrink in volume. When the pressure is released the mass of grain will exhibit a tendency to return to its original volume to the extent of approximately 50% of the loss in volume occasioned by the application of pressure. This Court cannot credit the testimony of the plaintiffs' experts to the effect that a mass of grain is utterly without elasticity or that when pressure is applied to a mass of grain, the kernels will realign themselves to accommodate the pressure without resistance or friction. The Court does not believe that a mass of grain in a container will act in a manner similar to a liquid in accommodating changes in the shape and volume of the container or will permit ordinary objects placed on the surface of the grain to sink out of sight.

9. The expert witnesses appear to be in agreement that something over one billion foot pounds of energy was stored in the steel tank and its contents in the form of gravitational energy represented by the force of the grain pushing out against the circular wall of the tank in an effort to achieve the natural angle of slope or repose such as would occur if 905,000 bushels of grain were piled on a flat surface. This force, the tank was strong enough to withstand; otherwise, it would have ruptured when filled. The Court finds and believes from the evidence that, as calculated by the defendant's expert witness Crawford, the shrinkage or constriction of the circular wall of the

steel tank during the twelve-hour temperature drop which preceded the splitting of the tank and the resulting loss in the internal volume of the tank, produced an additional force, caused by the elastic property of the mass of grain contained inside the tank and the resistance of the mass of grain to being constricted or further confined by the shrinking wall of the steel tank. This force was calculated to be between 200,000 and 300,000 foot pounds of energy. This energy was suddenly and completely released upon the splitting or rupture of the tank wall.

10. An explosion is a combination of several elements including such factors as increase in pressure, noise, a result such as a fractured container, and an active force or pressure which suddenly and violently exerts itself. It is not required that there be a sudden or violent increase in the internal force to constitute an explosion. The increase of the internal force must manifest itself in a sudden and violent action such as a sudden and violent release by breaking the container; but to do this, the increase of the internal pressure of a nonexplodable substance like wheat need not be sudden. The pressure required for an explosion to take place need not be unusual, abnormal, or suddenly produced. It is the sudden and violent release of the force which is the essential element of an explosion.

11. The outward pressure or active internal force of the compressed wheat against the contracting wall of the steel tank created by the elasticity of the mass of grain was the immediate and effective cause of the rupture of the tank wall at the time in question.

12. The Court finds from the evidence and the testimony of both expert and lay witnesses that the splitting or rupture of the tank wall was a violent, sudden event, resulting from increased pressure or stress due to the

resistance or counter-pressure of the mass of grain to the shrinking of the tank wall, and that the rupture of the tank wall was accompanied by a loud noise and a sudden, violent release of great energy.

CONCLUSIONS OF LAW.

1. The case brought by defendant herein against Appalachian Insurance Co. was disposed of by dismissal upon the execution and delivery of a loan receipt and the payment of the sums called for therein. The Court finds that the transaction was a bona fide transaction and was actually carried out according to the terms of the instruments executed between the parties. There does not appear to be an opportunity for the defendant, Sierra Petroleum Co., Inc., to realize a double recovery as the result of the Appalachian case and any judgment for the defendant, Sierra Petroleum Co., Inc., allowed in this action.

2. The policy of insurance involved in this action, which was issued by an insurance agency in Topeka, Kansas, to the insured, a Kansas corporation, covering property located in this state, is to be construed, interpreted and enforced according to the laws of Kansas.

3. Words and phrases appearing in a contract of insurance should be construed according to their plain, ordinary and usual meaning.

4. In case of doubt or ambiguity, the policy and its provisions must be construed in the manner most favorable to the insured.

5. The Supreme Court of Kansas, in *Chicago R. I. & Pac. Rld. Co.* v. *Aetna Ins. Co.*, 180 Kan. 730, 736, a case

involving a nonincendiary explosion of a grain elevator, approved the following definition of an explosion:

> ". . . a violent bursting or expansion, with noise, following the sudden production of great pressure. . . or a sudden release of pressure."

The facts and circumstances of the occurrence in question place it within that definition and within other definitive language to be found in the opinion of the Supreme Court.

6. This Court concludes that the destruction of defendant's grain tank did, in fact, result from an explosion within the meaning of that term as used in the provisions of the certificates of insurance and policies of insurance here under consideration.

7. General judgment should be rendered in favor of the defendant and against the plaintiffs on the issue of liability and coverage under the terms of the certificates and policies of insurance in question. The Court will retain jurisdiction for all further proceedings, necessary or appropriate, to determine the extent of damage or loss and the amount of recovery to which defendant may be entitled.

Dated this 2nd day of October, 1967.

B. Mack Bryant,
Judge, Division 3